

THE ASTROPHYSICAL JOURNAL

Supplement Series

Founded in 1895 by George E. Hale and James E. Keeler

ETHAN T. VISHNIAC

Editor-in-Chief
Johns Hopkins University

CHRISTOPHER SNEDEN

Letters Editor
University of Texas

W. B. BURTON

Associate Editor-in-Chief
University of Leiden & National Radio
Astronomy Observatory

JOHN SCALO

Deputy Letters Editor
University of Texas

Scientific Editors

TIMOTHY BASTIAN
National Radio
Astronomy Observatory

BRIAN CHABOYER
Dartmouth College

RICHARD DE GRIJS
The University of
Sheffield

STEVEN ROBERT
FEDERMAN
University of Toledo

ERIC D. FEIGELSON
Pennsylvania State
University

KATIA FERRIERE
Observatoire
Midi-Pyrenees

BRAD GIBSON
University of
Central Lancashire

LEON GOLUB
Smithsonian Astrophysical
Observatory

DIETER HARTMANN
Clemson University

STEVEN KAWALER
Iowa State University

ARI LAOR
Israel Institute of
Technology

JOHN MULCHAEY
The Carnegie
Observatory

CHUNG-PEI MA
University of California
Berkeley

JUDITH PIPHER
University of
Rochester

FREDERIC A. RASIO
Northwestern University

SUSAN M. SIMKIN
Michigan State
University

LUIGI STELLA
Osservatorio Astronomico
di Roma

JOAN M. WROBEL
National Radio
Astronomy Observatory

AAS PUBLICATIONS BOARD

MICHAEL A'HEARN (2005–2008), *Chairperson*
University of Maryland

RICHARD GREEN (2007–2008), *Chair-elect*
University of Arizona

PATRICK J. MCCARTHY (2006–2009)
The Carnegie Observatories

BO REIPURTH (2006–2009)
University of Hawaii

VIRGINIA L. TRIMBLE (2005–2008)
University of California, Irvine

JOSEPH CASSINELLI (2004–2007)
University of Wisconsin

LEE ANNE WILLSON (2007–2010)
Iowa State University

Production Manager: ALAIN PARK

Operations Manager: MARY GUILLEMETTE

Chief Manuscript Editor: ELIZABETH HUYCK

Manuscript Editors: THAD A. DORIA, GREG HAJEK, DON RENEAU, ERIC SHUTT, ELLEN CREDILLE,

JEREMY HORSEFIELD, KERRY TUPPER, ALISON COMPTON, ERICA GRIFFIN,

ELIZABETH SCHAEFER, JENNIFER DAVIS, ISAAC ROBINOVITZ, CAROLYN STEELE,

JOSHUA ALLEN, NATHAN CZUBA, ROBIN TAYLOR, AND NOEL TAYLOR

Production Staff: CINDY GARRETT, ERIK CAMERON,

ABBY DENNIS, CHRIS WIBERG, AND COURTNEY BONT

Hamilton, Ontario Editorial Office: JANICE SEXTON

VOLUME 175

2008 MARCH AND APRIL

PUBLISHED BY THE UNIVERSITY OF CHICAGO PRESS FOR
THE AMERICAN ASTRONOMICAL SOCIETY

© 2008 BY AMERICAN ASTRONOMICAL SOCIETY. ALL RIGHTS RESERVED.

PUBLISHED MONTHLY

COMPOSED BY SPI PUBLISHER SERVICES

PRINTED BY THE SHERIDAN PRESS

HANOVER, PENNSYLVANIA, U.S.A.

THE ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES

CONTENTS OF VOLUME 175

2008 MARCH NUMBER 1

	Page
ADAPTIVE OPTICS REST-FRAME <i>I</i> -BAND IMAGING OF LYMAN BREAK GALAXIES AT $z \sim 3$: HIGH SURFACE DENSITY DISKLIKE GALAXIES? <i>Masayuki Akiyama, Yosuke Minowa, Naoto Kobayashi, Kouji Ohta, Masataka Ando, & Ikuru Iwata</i>	1
THE FLUX AUTO- AND CROSS-CORRELATION OF THE $\text{Ly}\alpha$ FOREST. I. SPECTROSCOPY OF QSO PAIRS WITH ARCMINUTE SEPARATIONS AND SIMILAR REDSHIFTS © <i>Andrew R. Marhle, Kristoffer A. Eriksen, Chris D. Impey, Lei Bai, & Lance Miller</i>	29
MULTIWAVELENGTH CONSTRAINTS ON THE COSMIC STAR FORMATION HISTORY FROM SPECTROSCOPY: THE REST-FRAME ULTRAVIOLET, $\text{H}\alpha$, AND INFRARED LUMINOSITY FUNCTIONS AT REDSHIFTS $1.9 \lesssim z \lesssim 3.4$ © <i>Naveen A. Reddy, Charles C. Steidel, Max Pettini, Kurt L. Adelberger, Alice E. Shapley, Dawn K. Erb, & Mark Dickinson</i>	48
THE NORTH GALACTIC POLE $+30^\circ$ ZONE GALAXIES. I. A COMPARATIVE STUDY OF GALAXIES WITH DIFFERENT NUCLEAR ACTIVITY © <i>Artashes Petrosian, Brian McLean, Ron Allen, Daniel Kunth, & Claus Leitherer</i>	86
CGRaBS: AN ALL-SKY SURVEY OF GAMMA-RAY BLAZAR CANDIDATES © <i>Stephen E. Healey, Roger W. Romani, Garret Cotter, Peter F. Michelson, Edward F. Schlafly, Anthony C. S. Readhead, Paolo Giommi, Sylvain Chaty, Isabelle A. Grenier, & Lawrence C. Weintraub</i>	97
FERENGI: REDSHIFTING GALAXIES FROM SDSS TO GEMS, STAGES, AND COSMOS © <i>M. Barden, K. Jahnke, & B. Häußler</i>	105
SEOUL NATIONAL UNIVERSITY BRIGHT QUASAR SURVEY IN OPTICAL (SNUQSO). I. FIRST PHASE OBSERVATIONS AND RESULTS © <i>Induk Lee, Myungshin Im, Minjin Kim, Eugene Kang, Hyunjin Shim, Gordon T. Richards, Alastair C. Edge, Myung Gyoong Lee, Changbom Park, & Myeong-Gu Park</i>	116
THE $\text{H}\alpha$ LUMINOSITY FUNCTION AND STAR FORMATION RATE AT $z \approx 0.24$ IN THE COSMOS 2 SQUARE DEGREE FIELD © <i>Y. Shioya, Y. Taniguchi, S. S. Sasaki, T. Nagao, T. Murayama, M. I. Takahashi, M. Ajiki, Y. Ideue, S. Mihara, A. Nakajima, N. Z. Scoville, B. Mobasher, H. Aussel, M. Giallisco, L. Guzzo, G. Hasinger, C. Impey, O. Le Fèvre, S. Lilly, A. Renzini, M. Rich, D. B. Sanders, E. Schinnerer, P. Shopbell, A. Leauthaud, J.-P. Kneib, J. Rhodes, & R. Massey</i>	128
THE MILLIMETER- AND SUBMILLIMETER-WAVE SPECTRUM OF $^{13}\text{C}_1$ -METHYL FORMATE ($\text{H}^{13}\text{COOCH}_3$) IN THE GROUND STATE © <i>Atsuko Maeda, Ivan R. Medvedev, Frank C. De Lucia, Eric Herbst, & Peter Groner</i>	138
POINT SOURCES FROM A SPITZER IRAC SURVEY OF THE GALACTIC CENTER © <i>Solange V. Ramirez, Richard G. Arendt, Kris Selgren, Susan R. Stolovy, Angela Cotera, Howard A. Smith, & Farhad Yusef-Zadeh</i>	147
STRUCTURE OF SUPERGIANT SHELLS IN THE LARGE MAGELLANIC CLOUD <i>Laura G. Book, You-Hua Chu, & Robert A. Gruendl</i>	165
THE FIRST SWIFT BAT GAMMA-RAY BURST CATALOG © <i>T. Sakamoto, S. D. Barthelmy, L. Barbier, J. R. Cummings, E. E. Fenimore, N. Gehrels, D. Hullinger, H. A. Krimm, C. B. Markwardt, D. M. Palmer, A. M. Parsons, G. Sato, M. Stamatikos, J. Tueller, T. N. Ukwatta, & B. Zhang</i>	179
NEAR-INFRARED VARIABILITY IN THE 2MASS CALIBRATION FIELDS: A SEARCH FOR PLANETARY TRANSIT CANDIDATES © <i>Peter Plavchan, M. Jura, J. Davy Kirkpatrick, Roc M. Cutri, & S. C. Gallagher</i>	191
MODELS OF THE SOLAR CHROMOSPHERE AND TRANSITION REGION FROM SUMER AND HRTS OBSERVATIONS: FORMATION OF THE EXTREME-ULTRAVIOLET SPECTRUM OF HYDROGEN, CARBON, AND OXYGEN <i>Eugene H. Avrett & Rudolf Loeser</i>	229
THE SCUBA LEGACY CATALOGUES: SUBMILLIMETER-CONTINUUM OBJECTS DETECTED BY SCUBA © <i>James Di Francesco, Doug Johnstone, Helen Kirk, Todd MacKenzie, & Elizabeth Ledwosinska</i>	277

2008 APRIL, NUMBER 2

THE SIXTH DATA RELEASE OF THE SLOAN DIGITAL SKY SURVEY	297
Jennifer K. Adelman-McCarthy, Marcel A. Agüeros, Sahar S. Allam, Carlos Allende Prieto, Kurt S.J. Anderson, Scott F. Anderson, James Annis, Neta A. Bahcall, C. A. L. Bailer-Jones, Ivan K. Baldry, J. C. Barentine, Bruce A. Bassett, Andrew C. Becker, Timothy C. Beers, Eric F. Bell, Andreas A. Berlind, Mariangela Bernardi, Michael R. Blanton, John J. Bochanski, William N. Boroski, Jarle Brinchmann, J. Brinkmann, Robert J. Brunner, Tamás Budavári, Samuel Carliles, Michael A. Carr, Francisco J. Castander, David Cinabro, R. J. Cool, Kevin R. Covey, István Csabai, Carlos E. Cunha, James R. A. Davenport, Ben Dilday, Mamoru Doi, Daniel J. Eisenstein, Michael L. Evans, Xiaohui Fan, Douglas P. Finkbeiner, Scott D. Friedman, Joshua A. Frieman, Masataka Fukugita, Boris T. Gänsicke, Evalyn Gates, Bruce Gillespie, Karl Glazebrook, Jim Gray, Eva K. Grebel, James E. Gunn, Vijay K. Gurbani, Patrick B. Hall, Paul Harding, Michael Harvanek, Suzanne L. Hawley, Jeffrey Hayes, Timothy M. Heckman, John S. Hendry, Robert B. Hindsley, Christopher M. Hirata, Craig J. Hogan, David W. Hogg, Joseph B. Hyde, Shin-ichi Ichikawa, Željko Ivezić, Sebastian Jester, Jennifer A. Johnson, Anders M. Jorgensen, Mario Jurić, Stephen M. Kent, R. Kessler, S. J. Kleinman, G. R. Knapp, Richard G. Kron, Jurek Krzesinski, Nikolay Kuropatkin, Donald Q. Lamb, Hubert Lampeitl, Svetlana Lebedeva, Young Sun Lee, R. French Leger, Sébastien Lépine, Marcos Lima, Huan Lin, Daniel C. Long, Craig P. Loomis, Jon Loveday, Robert H. Lupton, Olena Malanushenko, Viktor Malanushenko, Rachel Mandelbaum, Bruce Marston, John P. Marriner, David Martínez-Delgado, Takahiko Matsubara, Peregrine M. McGehee, Timothy A. McKay, Avery Meiksin, Heather L. Morrison, Jeffrey A. Munn, Reiko Nakajima, Eric H. Neilsen, Jr., Heidi Jo Newberg, Robert C. Nichol, Tom Nicinski, Maria Nieto-Santisteban, Atsuko Nitta, Sadanori Okamura, Russell Owen, Hiroaki Oyaizu, Nikhil Padmanabhan, Kaike Pan, Changbom Park, John Peoples, Jr., Jeffrey R. Pier, Adrian C. Pope, Norbert Puer, M. Jordan Raddick, Paola Re Fiorentin, Gordon T. Richards, Michael W. Richmond, Adam G. Riess, Hans-Walter Rix, Constance M. Rockosi, Masao Sako, David J. Schlegel, Donald P. Schneider, Matthias R. Schreiber, Axel D. Schwabe, Uroš Seljak, Branimir Sesar, Erin Sheldon, Kazu Shimasaku, Thirupathi Sivarani, J. Allyn Smith, Stephanie A. Snedden, Matthias Steinmetz, Michael A. Strauss, Mark SubbaRao, Yasushi Suto, Alexander S. Szalay, István Szapudi, Paula Szkody, Max Tegmark, Aniruddha R. Thakur, Christy A. Tremonti, Douglas L. Tucker, Alan Uomoto, Daniel E. Vanden Berk, Jan VandenBerg, S. Vidrih, Michael S. Vogeley, Wolfgang Voges, Nicole P. Vogt, Yojesh Wadadekar, David H. Weinberg, Andrew A. West, Simon D. M. White, Brian C. Wilhite, Brian Yanny, D. R. Yocum, Donald G. York, Idit Zehavi, & Daniel B. Zucker	
THE VSP0 5 GHz ACTIVE GALACTIC NUCLEUS SURVEY. V. IMAGING RESULTS FOR THE REMAINING 140 SOURCES	314
R. Dodson, E. B. Fomalont, K. Wilk, S. Horiuchi, H. Hirabayashi, P. G. Edwards, Y. Murata, Y. Asaki, G. A. Moellenbrock, W. K. Scott, A. R. Taylor, L. I. Gurvits, Z. Paragi, S. Frey, Z.-Q. Shen, J. E. J. Lovell, S. J. Tingay, M. J. Rioja, S. Fodor, M. L. Lister, L. Mosoni, G. Coldwell, B. G. Piner, & J. Yang	
A COSMOLOGICAL FRAMEWORK FOR THE CO-EVOLUTION OF QUASARS, SUPERMASSIVE BLACK HOLES, AND ELLIPTICAL GALAXIES. I. GALAXY MERGERS AND QUASAR ACTIVITY	356
Philip F. Hopkins, Lars Hernquist, Thomas J. Cox, & Dušan Kereš	
A COSMOLOGICAL FRAMEWORK FOR THE CO-EVOLUTION OF QUASARS, SUPERMASSIVE BLACK HOLES, AND ELLIPTICAL GALAXIES. II. FORMATION OF RED ELLIPTICALS	390
Philip F. Hopkins, Thomas J. Cox, Dušan Kereš, & Lars Hernquist	
WFPC2 LRF IMAGING OF EMISSION-LINE NEBULAE IN 3CR RADIO GALAXIES	423
G. C. Privon, C. P. O'Dea, S. A. Baum, D. J. Axon, P. Kharb, C. L. Buchanan, W. Sparks, & M. Chiaberge	
SPATIALLY RESOLVED SPECTROSCOPY OF COMA CLUSTER EARLY-TYPE GALAXIES. IV. COMPLETING THE DATA SET	462
E. M. Corsini, G. Wegner, R. P. Saglia, J. Thomas, R. Bender, & D. Thomas	
SUBMILLIMETER OBSERVATIONS OF GIANT MOLECULAR CLOUDS IN THE LARGE MAGELLANIC CLOUD: TEMPERATURE AND DENSITY AS DETERMINED FROM $J = 3-2$ AND $J = 1-0$ TRANSITIONS OF CO	485
Tetsuhiro Minamidani, Norikazu Mizuno, Yoji Mizuno, Akiko Kawamura, Toshikazu Onishi, Tetsuo Hasegawa, Ken'ichi Tatematsu, Masafumi Ikeda, Yoshiaki Moriguchi, Nobuyuki Yamaguchi, Jürgen Ott, Tony Wong, Erik Muller, Jorge L. Pineda, Annie Hughes, Lister Staveley-Smith, Ulrich Klein, Akira Mizuno, Silvana Nikolić, Roy S. Booth, Arto Heikkilä, Lars-Ake Nyman, Mikael Lerner, Guido Garay, Sungeun Kim, Motosuji Fujishita, Tokuchi Kawase, Monica Rubio, & Yasuo Fukui	
AN AMMONIA SPECTRAL ATLAS OF DENSE CORES IN PERSEUS	509
E. W. Rosolowsky, J. E. Pineda, J. B. Foster, M. A. Borkin, J. Kauffmann, P. Caselli, P. C. Myers, & A. A. Goodman	
A CATALOG OF PLANETARY NEBULAE IN THE ELLIPTICAL GALAXY NGC 4697	522
R. H. Méndez, A. M. Teodorescu, & R.-P. Kudritzki	
X-RAY ENABLED MOCASSIN: A THREE-DIMENSIONAL CODE FOR PHOTOIONIZED MEDIA	534
Barbara Ercolano, Peter R. Young, Jeremy J. Drake, & John C. Raymond	
ELECTRON-IMPACT IONIZATION OF Be-LIKE C III, N IV, AND O V	543
M. Fogle, E. M. Bahati, M. E. Bannister, C. R. Vane, S. D. Loch, M. S. Pindzola, C. P. Ballance, R. D. Thomas, V. Zhaunerchyk, P. Bryans, W. Mitthumsiri, & D. W. Savin	

